REMARKS

Claims 20, 21 and 23-37 are presently in the application. Claims 1-19 and 22 have been canceled. Claims 26, 28, 29, 31-34 and 36 have been withdrawn from consideration as being drawn to a nonelected species.

In the Office action mailed August 24, 2007, the examiner omitted a rejection or an indication of allowability of claim 24. Accordingly, it is requested that the finality of the rejection be withdrawn and a new corrected Office action be issued.

Claim 37 has been amended to include the phrase "means for" followed by the functional language describing the function performed by the "means" ("for increasing pressure of fuel received by the fuel injection device from said high-pressure fuel source"). The disclosed structure corresponding to the pressure booster means 11 includes an injector body 4, a working chamber 12 provided in the body 4, which can be acted on with highly pressurized fuel via an inlet 13 branching from a high-pressure line 3, a pressure booster piston 14 that has a first end 15 oriented toward the working chamber 12 and a second end 16 oriented toward a differential pressure chamber 17, a return spring 18, and a high-pressure chamber 19 contained in the lower region of body 4. See, spec., para. 23.

Claim 37 has been rejected under 35 USC 102(b) as anticipated by Boecking (US 2002/0023970). Reconsideration of the rejection is requested.

Claim 37 is directed to a fuel injection device comprising, inter alia, a pressure booster means 11 for increasing pressure of fuel received by the fuel injection device from a

high-pressure fuel source 2, the pressure boosting means being provided in a multi-part injector body 4.

In the rejection of claim 37, the examiner describes Boecking (US 2002/0023970) as teaching a pressure boosting piston 9, 15, 19; a working chamber 13; a differential pressure chamber (chamber surrounding 10); an on-off valve 3; and a central control line (downstream vertical portion of 10).

MPEP 2182 instructs examiners that "the application of a prior art reference to a means or step plus function limitation requires that the prior art element perform the identical function specified in the claim."

The elements identified by the examiner do not perform the identical function specified in the claim, that is, the elements identified by the examiner as a pressure booster do not increase the pressure of fuel received by the fuel injection device from a high-pressure fuel source. In Boecking, injection pressure is supplied directly to the nozzle chamber 28 from the common rail via supply line 11 and is not boosted. See, para. [0013]. Elements 9, 15 and 19 are parts of a control valve for control chamber 24. In fact, there is absolutely no teaching in Boecking that elements 9, 15, 19, 13, and 3 perform any pressure boosting function.

To support a rejection of a claim under 35 U.S.C. 102(b), it must be shown that each element of the claim is found, either expressly described or under principles of inherency, in a

single prior art reference. See Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984).

Boecking fails to teach or suggest a fuel injection device of the type recited in claim 37, including a means for increasing pressure of fuel received by the fuel injection device from a high-pressure fuel source. Accordingly, claim 37 is not anticipated by Boecking.

Claims 20, 21, 23, 25, 27 and 30 have been rejected under 35 USC 102(b) as anticipated by Kato et al (US 4,627,571). Reconsideration of the rejection is requested.

Claims 20, 21, 23, 25, 27 and 30 all depend from independent claim 37 and, accordingly, also recite a pressure booster means for increasing pressure of fuel received by the fuel injection device from a high-pressure fuel source, the pressure boosting means being provided in a multi-part injector body 4.

According to the examiner, Kato et al teaches: a pressure booster piston 56; a working chamber 24; and a differential pressure chamber 54 (Fig. 1).

In fact, like Boecking (US 2002/0023970), Kato et al fails to teach a fuel injection device with a pressure booster means as recited in claims 20, 21, 23, 25, 27 and 30.

In Kato, injection pressure is supplied directly from pump 12 via lines 14 and 26 to an accumulating chamber 24, passage 15 and into valve chamber 28. See, col. 2, l. 65 through col. 3, l. 3. What the examiner describes as "pressure booster piston 56" is actually a damping plunger (col. 3, l. 36). Element 24 is an accumulating chamber (col. 2, l. 64) and element 54 is a damping chamber (col. 3, l. 34).

What Kato actually discloses is a damping plunger 56 for damping the opening motion of nozzle needle 32. The damping plunger has a through-hole 58 coaxially formed therein and passing through the damping plunger 56. This through-hole 58 communicates damping chamber 54 with connector hole 60 which is formed in the upper end portion of valve member 42. Neither damping plunger 56 nor valve member 42 is part of a pressure booster. Further, the damping plunger 56 cannot be said to seal the connector hole 60 off from the damping chamber 54, because the damping chamber 54 and connector hole 60 are in always in fluid communication via the through-hole 58.

In view of the above, Kato et al does not anticipate claims 20, 21, 23, 25, 27 and 30.

Further, the dependent claims recite additional structure not taught by Kato. For example, claim 27 recites that the line section of the central control line supports a sealing sleeve that can move in relation to the line section and that produces a high-pressure seal for the working chamber and a spring for biasing the sealing sleeve. No such structure is found in Kato et al.

Claims 20, 21, 23, 25 and 37 have been rejected under 35 USC 102(b) as anticipated by Boecking et al (WO 01/38712).

Claims 20, 21, 23, 25 all depend from independent claim 37 and, accordingly, also recite a pressure booster means for increasing pressure of fuel received by the fuel injection device from a high-pressure fuel source, the pressure boosting means being provided in a multi-part injector body 4.

According to the examiner, Boecking et al (WO 01/38712) teaches a pressure booster comprising a pressure boosting piston 62, a working chamber 78 and a differential pressure chamber 75.

In fact, like Boecking (US 2002/0023970) and Kato et al, Boecking et al (WO 01/38712) fails to teach a fuel injection device with a pressure booster means as recited in claims 20, 21, 23, 25, and 37.

US 6,581,850 is the English-language equivalent of WO 01/38712. In col. 5, ll. 31-37, of US 6,581,850, it is taught that the injection valve member 24 is moved in the opening direction by the pressure of the reservoir 14 acting on pressure shoulder 36. There is no mention of means being provided for increasing the pressure of the fuel received by the fuel injection device from the reservoir 14.

Boecking et al (WO 01/38712) fails to teach or suggest a fuel injection device of the type recited in claim 37, including a means for increasing pressure of fuel received by the fuel injection device from a high-pressure fuel source. Accordingly, claims 20, 21, 23, 25, and 37 are not anticipated by Boecking et al (WO 01/38712).

Claims 35 and 37 have been rejected under 35 USC 102(b) as anticipated by Schneider (US 4,538,576). Reconsideration of the rejection is requested.

According to the examiner, Schneider (US 4,538,576) teaches a pressure booster comprising a pressure booster piston 18, a working chamber 20 and a differential pressure chamber 30.

In addition to the other language previously discussed, claim 37 requires that the pressure booster piston be actuated by means of a pressure change in the differential pressure chamber and that the pressure change in the differential pressure chamber must occurred via the central control line. With regard to the teaching in Schneider, this requires that the "pressure booster piston" 18 be actuated by means of a pressure change in the "differential pressure chamber" 30 occurring via the line 46, but this does not occur in Schneider.

In col. 3, ll. 47-54, Schneider teaches that

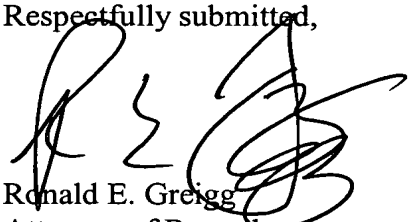
> The injection phase begins when the control valve 80 prohibits fuel communication between passages 90 and 82, thus restricting flow from the timing chamber 20. The fuel within the timing chamber 20 will be compressed as the pumping plunger 16 descends, thus establishing a hydraulic link and forcing the metering piston 18 downward.

It is clear from this teaching that the metering piston 18 is not actuated by a pressure change in the metering chamber 30 (identifed by the examiner as the claimed "differential pressure chamber"). Rather, the metering piston 18 is actuated by a pressure change in the timing chamber 20. Thus, Schneider does not anticipate claim 37, because it does not teach a pressure booster piston actuated by means of a pressure change in the differential pressure chamber occurring via the control line as required by claim 37.

Since claim 37 is generic and has been shown to be allowable over the applied prior art, it is proper to reinstate non-elected claims 26-28, 29, 31-34 and 36 and allow them along with allowable claim 37, on which they ultimately depend.

The mailing of a corrected Office action, entry of the amendment and allowance of the application are respectfully requested.

Respectfully submitted,



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